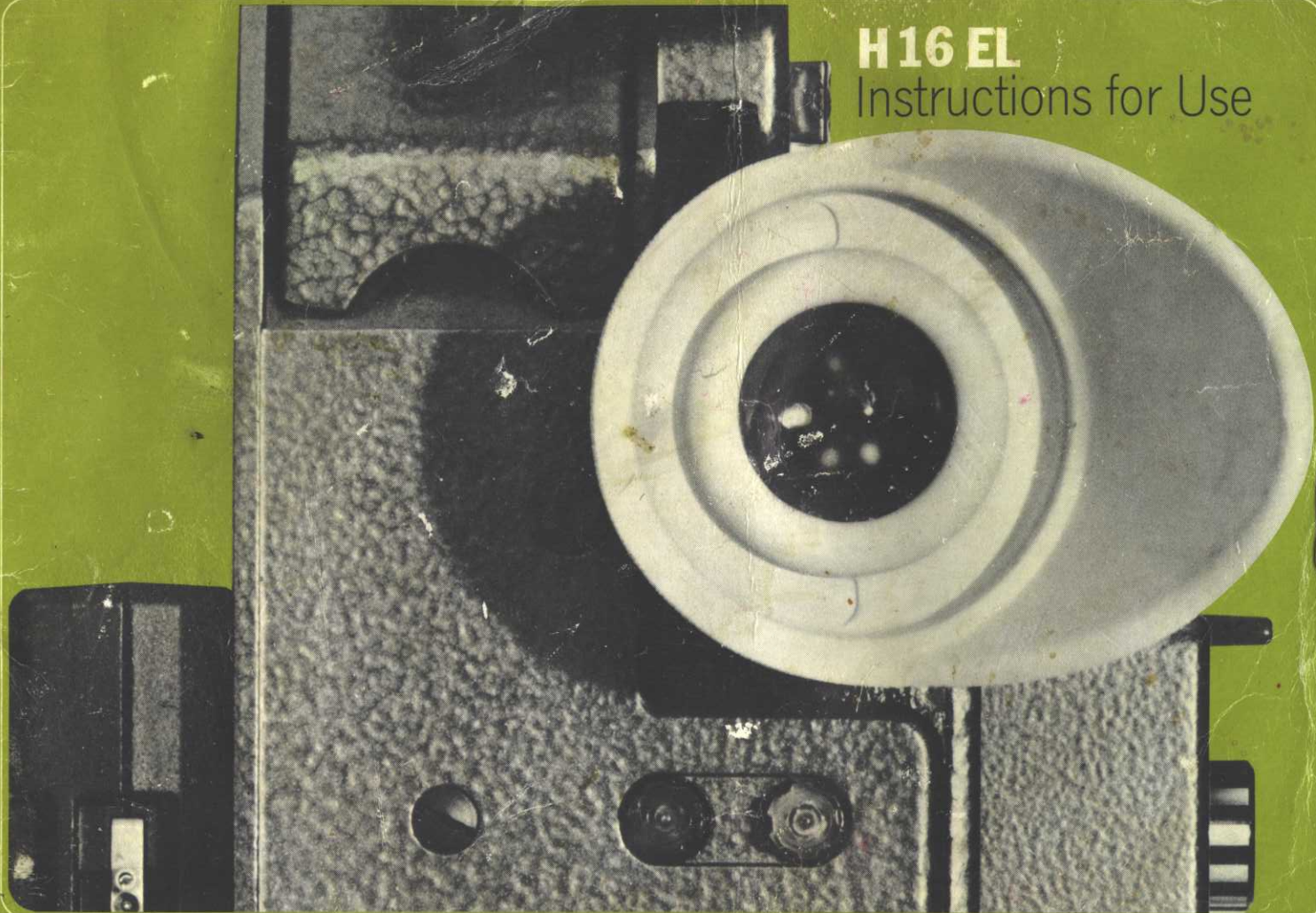


**H 16 EL**

Instructions for Use



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	3rd cover
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# Description

## Right-hand side

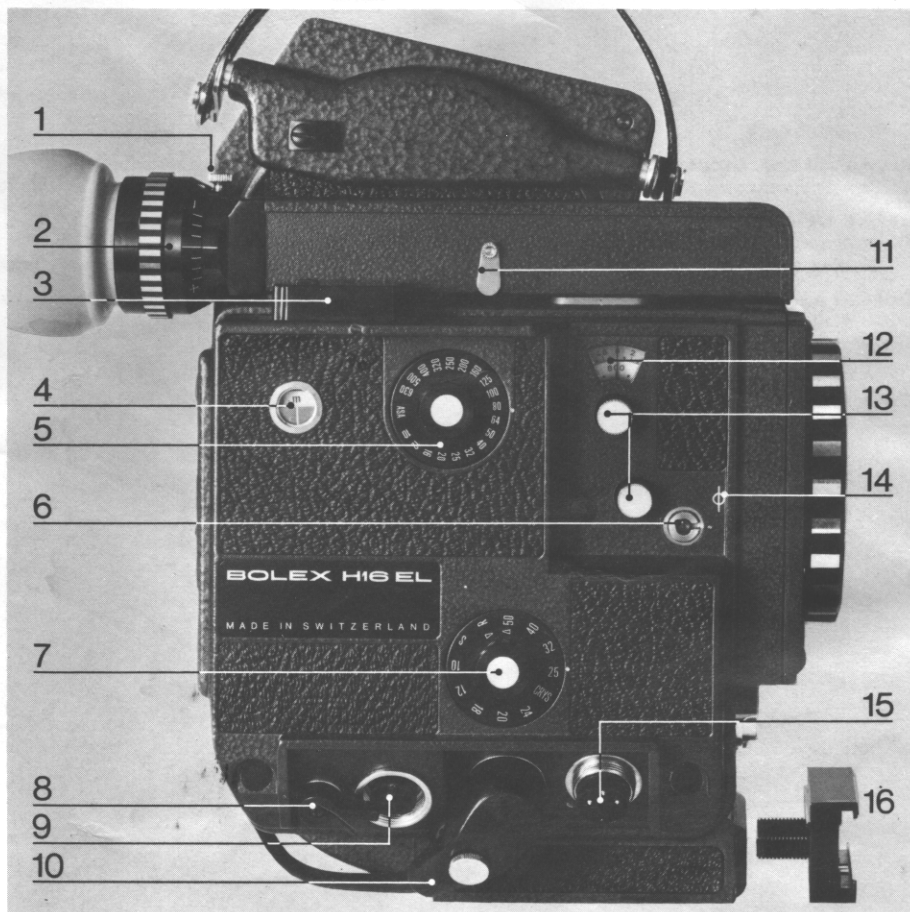
- 1 Eyepiece locking screw
- 2 Eyepiece setting ring
- 3 Power socket for the take-up motor of the 400 ft magazine
- 4 Footage counter
- 5 Film sensitivity selector
- 6 1 : 1 spindle
- 7 Filming speed selector
- 8 Clapper lamp switch
- 9 Socket for sync pulse or crystal control accessory
- 10 Power pack plug inserted in the power socket
- 11 Reflex viewfinder closing lever
- 12 Frame counter
- 13 Frame counter setting knobs
- 14 Film plane guide mark
- 15 Remote-control socket
- 16 Compendium holder (part supplied with the compendium)

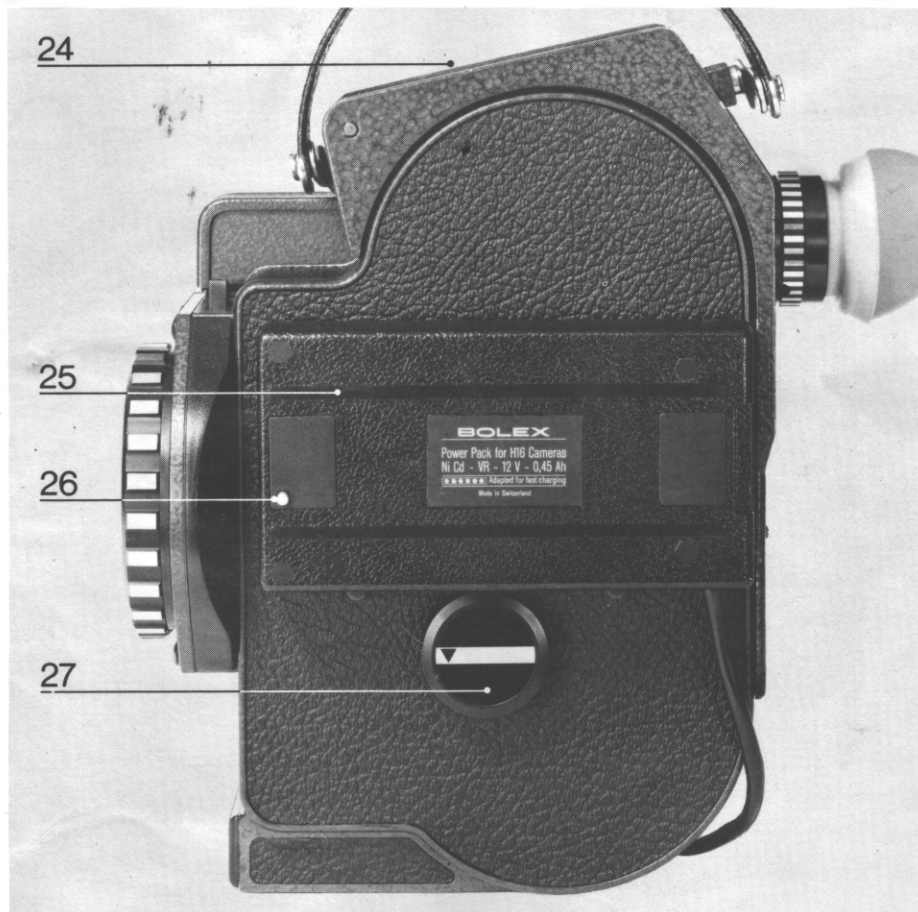
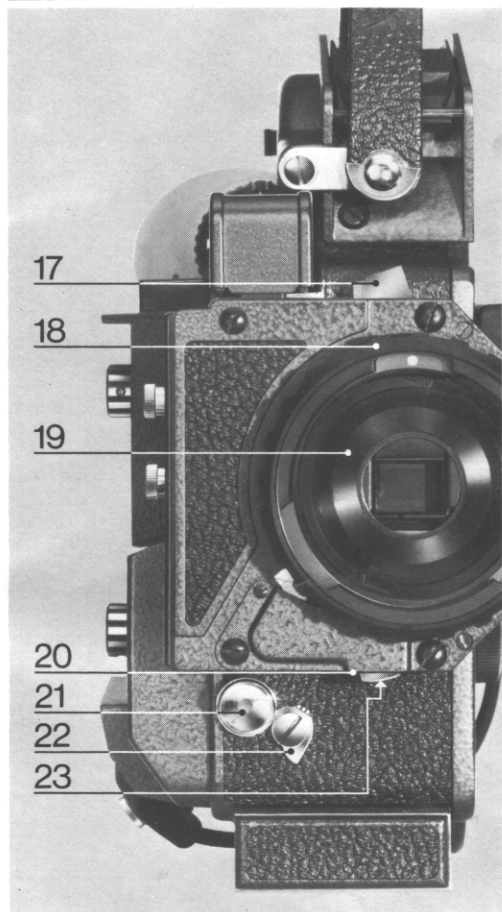
## Front

- 17 Cell switching button
- 18 Bayonet lens mount
- 19 Filter-holder in two parts
- 20 Bayonet locking lever
- 21 Release
- 22 Release locking lever
- 23 Cover for the clapper lamp mount

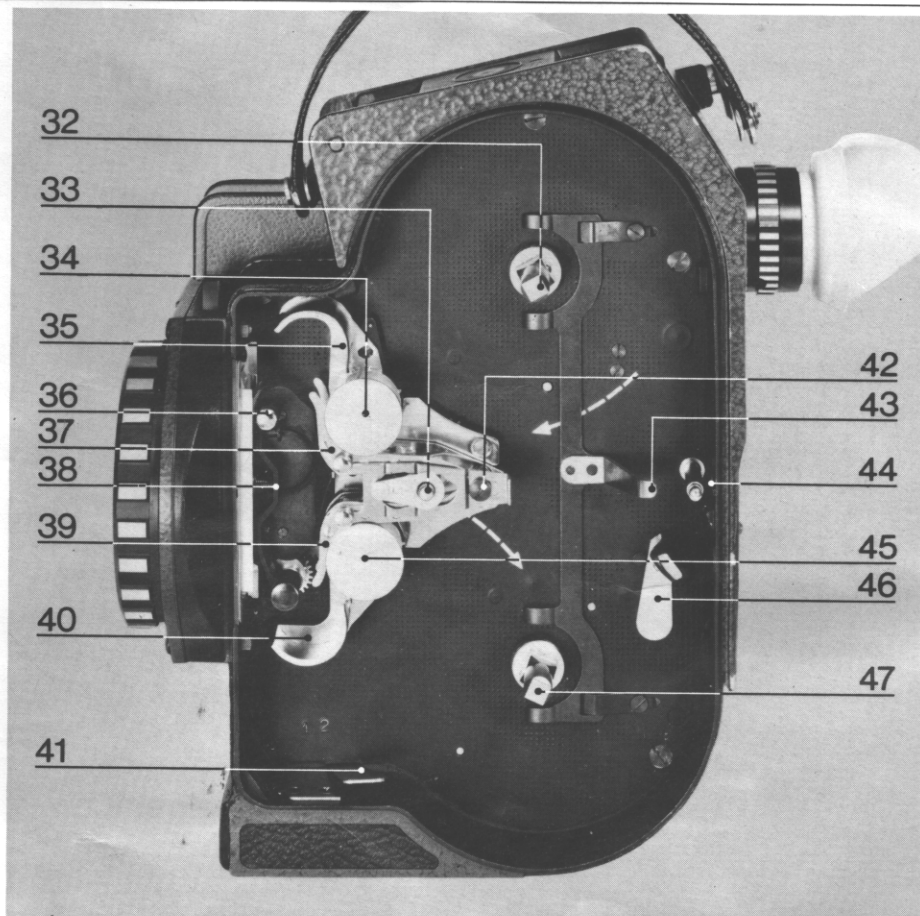
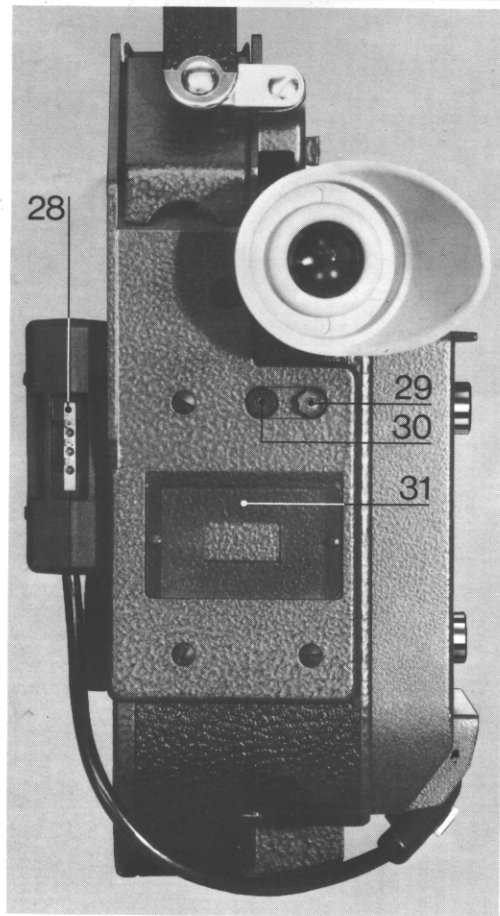
## Left-hand side

- 24 400 ft magazine attachment device
- 25 12 V/0.45 Ah power pack
- 26 Power pack release button
- 27 Cover opening knob









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**Back**

- 28 Socket for recharging the power pack
- 29 Clapper pilot light
- 30 Undervoltage warning light
- 31 Memento holder

**Inside of case**

- 32 Upper shaft for feed spool
- 33 Loop former locking lever and opening knob
- 34 Upper feed sprocket
- 35 Upper loop former
- 36 Pressure pad locking pin
- 37 Upper feed sprocket guide (articulated, spring-mounted)
- 38 Pressure pad
- 39 Lower feed sprocket guide (articulated, spring-mounted)
- 40 Lower loop former
- 41 Film cutter
- 42 Slide for opening the feed sprocket guides
- 43 Spool ejector
- 44 Knob for setting footage counter to "ft"
- 45 Lower sprocket
- 46 Spool brake
- 47 Lower shaft for take-up spool

**General**

The H16 EL camera takes 100 ft spools of single or double perforated 16 mm film\*, and up to 400 ft of film with the 400 ft magazine supplied as an extra.

\* (\* Films with a single row of perforations are used when a magnetic track is to be added to the original film.)

## Technical specifications

Nominal capacity: all 16 mm films on 100 ft spools.

Possibility of mounting an accessory 400 ft magazine.

**Electric motor**, electronically regulated by impulses, for optimum use of the power of the battery and perfectly constant filming speeds.

Filming speeds of 10, 12, 18, 20, 24, 25, 32, 40 and 50 f.p.s. + single-frame.

24 and 25 f.p.s. filming speed accuracy in accordance with sync pulse standards.

Possibility of sound synchronization with crystal control accessory at 24 and 25 f.p.s.; maximum deviation for 400 ft of film: less than one frame.

Camera stops with shutter closed for all functions.

Practically instant start and stop, with no noticeable overexposure of the first or last frame of a take.

Unlimited reverse running.

170° rotary shutter opening.

Automatic film threading; spool ejector; loop former.

**Powered** by SAFT Ni-Cd battery with low internal resistance, nominal voltage 12 V-DC (alternating current excluded, for fear of destroying elements);

choice of two power packs:

- 12 V/0.45 Ah, mounted on the camera lid; capacity: about 600 ft of film at + 20°C and 25 f.p.s.;
- 12 V/1.2 Ah, carried slung over the shoulder or in a pocket; capacity: about 2000 ft of film at + 20°C and 25 f.p.s.

Both power packs are equipped for rapid recharging (temperature probes and safety thermostat); all SAFT VR-type Ni-Cd elements are also provided with a safety valve as protection against excessive pressure. Two battery chargers are available:

- standard charger: recharges either power pack in about 12 hours;
- rapid charger: recharges the 12 V/0.45 Ah power pack in about 30 minutes and the 12 V/1.2 Ah power pack in about 1 hour 20 minutes.

**Reflex viewfinder** with light captured through swivelling prism mounted in front of the shutter.

Misadjustment-proof ground glass on prism itself.

Adjustable eyepiece:  $\pm 5$  diopters.

Magnification: 13 $\times$ .

Directional rubber eyecup that can be folded over.

Viewfinder light trap.

Field of view corresponding to standard 16 mm projection field.

Extremely rugged **bayonet lens mount**, with built-in filter holder.

Bearing on three small tongues.

Centering diameter: 60 mm.

Distance between bearing plane of tongues and lens focal plane: 23.22 mm.

Most "C" mount lenses easily adapted.

High performance, **built-in light meter**.

Through-the-lens measurement of the light by a cell which fits in front of the filming aperture while the diaphragm is being set. Instant reaction, linear characteristic silicon cell, for electronic processing of the data: film sensitivity, filming speed, lighting of the

cell; it is practically proof against dazzle, variations in temperature, and ageing. Sensitivity range: 10 to 630 ASA (11 to 29 DIN) with automatic coupling at all filming speeds. The silicon cell is "adapted" to the spectral sensitivity of the film by an optical filter.

Measurement of the light in the centre of the field of view over about 35% of the picture area.

Manual operation of the diaphragm setting ring, the correct opening being set by balancing the brilliance of two light-emitting diodes located in the viewfinder; possibility of detecting an over- or under-exposure of 1 stop.

**Sync pulse socket** for sync pulse and automatic slating, or for connecting a crystal accessory.

Built-in **release** switch controlling all functions: forward and reverse motion, single-frame operation. Safety lock: prevents the accidental operation of the camera; also makes it possible to lock the release in the "release" position (for continuous operation).

**Frame counter** up to 1000 frames.

**Footage counter**.

**Remote-control socket**.

## ***Reflex viewfinder***

### ***Standard equipment supplied with the camera***

- 1 12 V/0.45 Ah battery
- 1 standard battery charger (about 12 hours)
- 4 gelatine filter-holders (1 on the camera,  
3 separately)
- 4 gelatine filters
- 1 rubber eyecup
- 1 protective cap for bayonet lens mount
- 1 3 ft remote-control cable.



The reflex prism deflects, into the viewfinder, about 25% of the light passing through the lens. The "Exposure times" table on page 12 makes allowances for this in the column "Photometric exposure times".

### ***Adjusting the eyepiece to your eyesight***

- Remove the lens.
- Loosen the eyepiece locking screw.
- Point the camera at a well-lit subject (sky, white wall, etc.).
- Turn the milled ring of the eyepiece as far as it will go (+ sign) in a counter-clockwise direction, then turn slowly back until the grain of the ground glass appears perfectly sharp.
- Tighten the locking screw.
- Put the lens on again.

If this adjustment is correct, a distant object

(about 500 ft) should appear perfectly sharp at full aperture, with the distance-setting ring set to ( $\infty$ ).

### ***Closing the viewfinder***

If you do not use the viewfinder while filming, close it by setting the small lever 11 vertical, in order to prevent any light from entering through the eyepiece and fogging the film, when the light source (lamp or sun) is situated behind the camera in a direct line with the viewfinder.

Red dot hidden by the lever: viewfinder closed; red dot visible: viewfinder open.

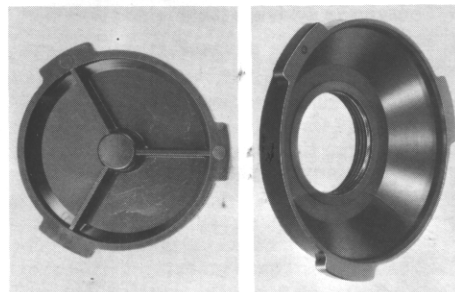
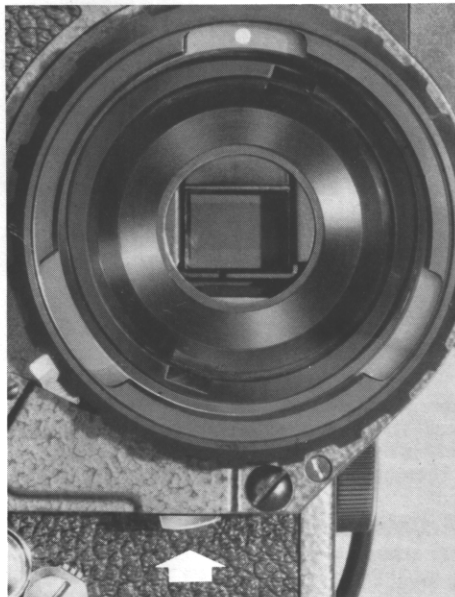


## Optical equipment

The H16 EL camera is designed to take almost all lenses available on the market, whether with Bolex bayonet mounts or "C" mounts with the adaptor ring supplied separately.

The presence of the prism capturing light for the viewfinder requires no particular correction of the lenses, whose geometric opening does not exceed  $f/1.8$ , except in the case of certain special lenses with markedly conical emerging pencils of rays.

(Naturally, all Bolex lenses can be used on the H16 EL just as they are.)



### Attaching bayonet mount lenses

- After pressing down on the locking lever, loosen the milled ring and turn it as far as it will go.
- Remove the protective cover.
- Insert the lens into its housing; when the tongue with the guide mark on it is inserted in the top slot, the lens is in the best position for turning the rings; but you can also place the tongue with the guide mark in either of the other two slots if you wish.
- Tighten the milled ring.

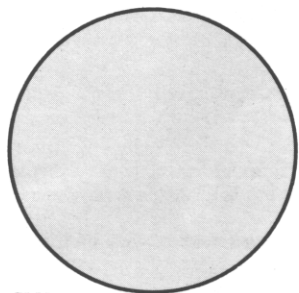
### To remove the lens:

- Unscrew the milled ring until stopped by the locking system: the lens cannot fall out.
- Press down on the locking lever and turn the milled ring as far as it will go: you can then take the lens out without any difficulty.

When you remove the lens, do not forget to put the protective cover on again, so as to avoid any dust getting in and being left on the reflex prism.

### Attaching "C" mount lenses

"C" mount lenses can be used by means of an adaptor available as an accessory. The lens must be screwed onto the concave side of the adaptor. The lens + adaptor unit is attached to the lens mount of the camera as described above.



## Filters

The H16 EL can be fitted with a gelatine filter-holder which screws into the lens mount.

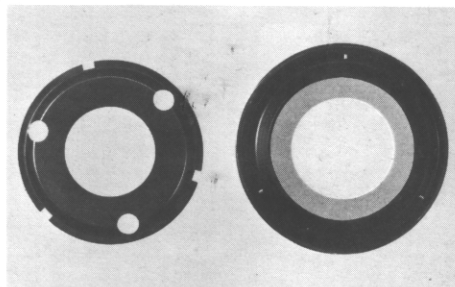
### **To remove the filter-holder from the lens mount**

- Take off the lens.
- Using two fingers, unscrew the filter-holder about  $\frac{1}{4}$  of a turn, and take it out, tilting the camera forward.

To put it back in, proceed in the reverse order, taking care not to touch the filter itself with your fingers.

### **To insert or change a gelatine filter**

- Open the filter-holder by turning the counter-ring until the three pins are opposite the three slots.
- Using the above model if necessary, cut a disc about 38 mm in diameter (maximum 40 mm) out of the square of gelatine, taking care not to remove the protective sheets; at all costs avoid the paper rubbing against the filter: a scratched filter = loss of clearness in the picture.



- Center the filter in the opening provided for the purpose and place the counter-ring on again.

If a filter is coloured, its presence will be visible in the viewfinder.

As the filter is located in front of the light meter cell, it is automatically taken into account in the measurement of the light; no special correction therefore needs to be made to the normal setting of the diaphragm.

We advise you, as a general rule, to insert only one gelatine filter at a time in the filter-holder: superimposing two gelatine filters risks producing the phenomenon known as "Newton's rings".

In addition, do not forget to note, on the label provided for the purpose, the type of filter placed in the filter-holder ready for use.

*N. B.:* Note that the use of a gelatine filter, placed in the camera's built-in filter-holder, behind the lens, in no way excludes the use of a second filter, mounted in front of the lens.

## **Focusing adjustment**

Placing a filter behind the lens slightly alters the lens focusing. However, the necessary correction is automatically made when the reflex viewfinder is used.

# Camera operation

## Power

The H16 EL can be powered by any 12 V battery capable of supplying the necessary current:

voltage limits	10.5 to 13.5 V DC, all functions ensured; 16.5 V DC, limit for not damaging the electronic system;
starting current	~ 10 A, for a fraction of a second;
normal consumption	from 0.8 to 1.2 A, depending on method of operation.

Two power packs, equipped with high quality batteries, are available:

### **12 V/0.45 Ah power pack** (part of the standard equipment)

The 12 V/0.45 Ah power pack, which is mounted on the camera lid, provides sufficient power for about 600 ft of film at 25 f.p.s. and 20°C.

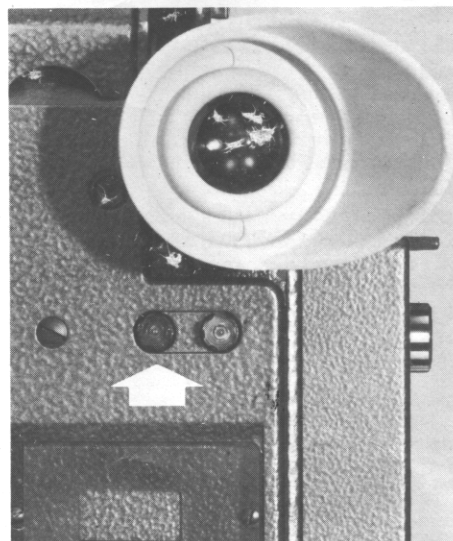
To remove the power pack from the camera lid:

- press on release button 26, and pull the power pack towards the back of the camera.

The cable belonging to the power pack must be plugged into the camera power socket (4-pin socket).

### **12 V/1.2 Ah power pack** (available as an extra)

The 12 V/1.2 Ah power pack, which is carried in a pocket, slung over the shoulder, or at



the waist, provides sufficient power for about 2000 ft of film at 25 f.p.s. and + 20°C.

The 12 V/1.2 Ah power pack is supplied with:  
1 power supply cable for plugging into the camera power socket (4-pin socket);  
1 protective cover (+ strap).

Power packs are supplied uncharged. Do not forget to charge them for 12 hours before use.

## **Checking the charge and recharging**

The state of charge of the power pack must be checked on the camera.

- Plug in the power pack.
- Press on the camera release.

The red warning light 30 must come on, then go out immediately. If it remains alight, this means that the voltage is not strong enough and that the power pack needs recharging.

*N.B.* Never allow a power pack to discharge below the minimum voltage indicated above, for fear of damaging the elements (see page 19).

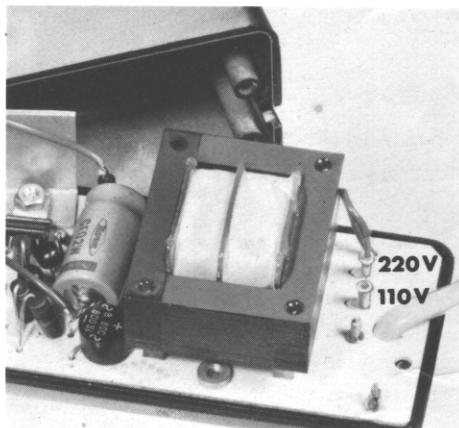
Two chargers are available, one for normal charging, the other for rapid charging:

## **Normal charging**

The charger supplied as standard equipment makes it possible to charge the two power packs fully in about 12 hours.

Charging is carried out at constant current, with automatic switching to 50 mA for the 12 V/0.45 Ah power pack, or to 120 mA for the 12 V/1.2 Ah power pack.

Make sure that the charger is set to the voltage corresponding to that of the mains available:



110 V valid for a mains between 90 and 130 V, 50/60 cycles;  
220 V valid for a mains between 200 and 250 V, 50/60 cycles.

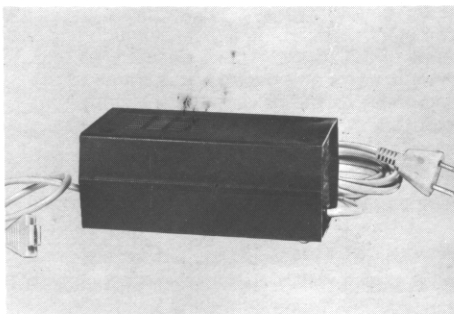
To change the voltage:

- take off the lid;
- place the plug on the corresponding terminal.

*N. B.: Before doing this, make sure the mains plug is disconnected.*

The secondary cable on the charger must be plugged into the green socket 28 on the power pack. Charging is indicated by the control lamp lighting up on the charger.

Power packs may be left charging for much longer than necessary (up to 48 hours) without any risk of damage to the batteries.



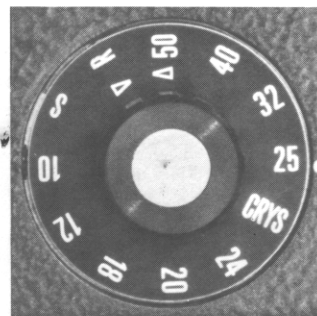
### **Rapid charging**

Both Bolex power packs are equipped for rapid charging (built-in electronic system for checking the temperature and safety thermostat).

*A special charger, available as an extra, makes it possible to recharge either power pack very quickly up to about 90% of its capacity; recharging time:*

12 V/0.45 Ah power pack	~ 30 minutes
12 V/1.2 Ah power pack	~ 1 hour 20 minutes

Equipped with a complex electronic regulating system, which takes the voltage and internal temperature of the battery into account, this charger avoids any risk of overcharging. It automatically switches to normal charging as soon as rapid charging is completed.



### **Filming speeds and method of operation**

The filming speeds and method of operation are controlled by a single knob which has only to be turned to the desired position:

- |         |  |
|---------|--|
| R       | = reverse motion at 18 f.p.s. (not for filming, only for rewinding);   |
| S       | = single-frame filming;  |
| 10 → 50 | = forward motion at the speed set; the intermediate positions are not usable;  |
| CRYSTAL | = (crystal) set to this position, the motor can be synchronized on a stabilized frequency, supplied by an exterior crystal available as an extra (see below, page 16). |

The motor is electronically controlled. The filming speeds remain stable whatever the outside conditions (type of film, temperature, etc.). The speeds of 24 and 25 f.p.s. are regulated in accordance with the standards in force for synchronous sound recording.



### Exposure times

(fractions of a second)

In the calculation of the real exposure times allowances have been made for the shutter which opens to 170°.

The "photometric" exposures have been obtained by reducing the real exposure times of the camera by 25% in order to allow for the light deflected into the reflex viewfinder.

Filming speed	Exposures	
	real	photometric
10 f.p.s.	1/21	1/28
12 f.p.s.	1/25	1/33
18 f.p.s.	1/37	1/50
20 f.p.s.	1/42	1/56
24 f.p.s.	1/50	1/67
25 f.p.s.	1/53	1/70
32 f.p.s.	1/67	1/93
40 f.p.s.	1/83	1/110
50 f.p.s.	1/106	1/140
S	1/37	1/50

### Release

You can operate the mechanism in normal forward motion, single-frame operation, or reverse motion, either by pressing on the built-in release 21, or by means of the remote-control cable plugged into socket 15.

The switch for the remote-control cable as well as the camera's built-in release (lever 22) can be locked in the operating position (continuous operation).

It should be noted that lever 22 can also be used to lock the camera's built-in release in the stopped position, in order to avoid filming accidentally (safety lock for transport).

### N. B.

The mechanism starts almost immediately and stops in the shutter closed position, so that there is never any overexposed frame at the beginning or end of each take; slight overexposure may occur however at a filming speed of 50 f.p.s.

If the camera does not start, check the fuse (see page 19).

### Frame counter

By indicating the exact number of frames exposed, the frame counter is invaluable for scientific films, various effects and tricks (lap dissolves, double-exposures, etc.). It is also very useful for single-frame filming.

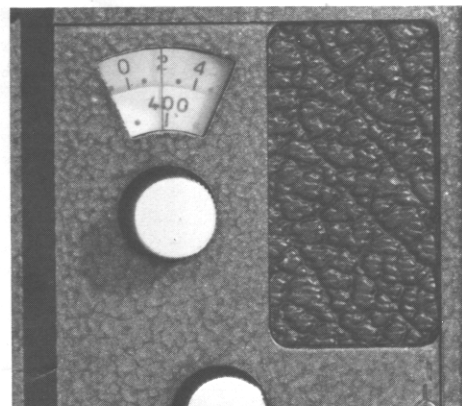
*The upper dial* adds the frames in forward motion and subtracts them in reverse motion, from 0 to 50 frames.

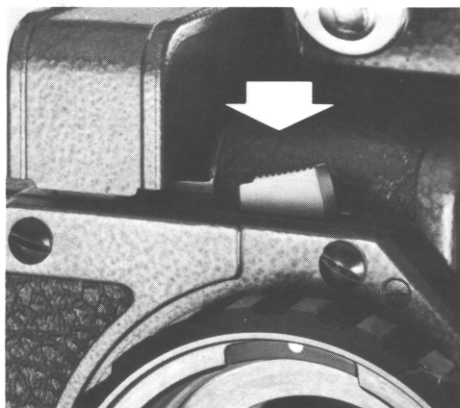
*The lower dial* totals up the frames in forward motion and subtracts them in reverse motion, 50 frames at a time, up to 1000 frames.

Once this total has been reached, the cycle starts all over again, and the figures indicated by the two counters must be added to the 1000 frames already counted. Take no notice of the relative positions of the two dials, only of their readings.

You can easily check at any time whether the readings given by the frame counter refer to the first or the second cycle, by looking at the footage counter. 1000 frames of 16 mm film correspond to 7.62 m of film.

To reset the frame counter to zero, use both knob (a), which controls the upper dial, and at the same time knob (b) which controls the lower "totalizer" dial.





## Light meter

The H16 EL is provided with a silicon cell that can be inserted in front of the filming aperture by pressing on control button 17. The cell receives the same light as the film. Measurement is effected while the camera mechanism is stopped.

This device makes it possible to carry out extremely precise measurement, over the field of view, whatever the lens or the optical combination used.

Sensitivity range: 10 to 630 ASA (11 to 29 DIN) with automatic coupling at all filming speeds.

Setting precision:  $\pm 1/3$  of a stop, between  $-10$  and  $+50^\circ\text{C}$ .

Reaction time: the silicon cell responds instantly to any change in light; having no memory, it retains its full precision even after being exposed to the rays of the sun or plunged into darkness for a long time.

The linearity of the cell, together with its electronic system, makes it ideally suited to the chromatic sensitivity of "Daylight" and "Tungsten" films.

## Operation

To set the diaphragm, proceed as follows:

- press on the cell switching button 17;
- with your eye to the viewfinder, turn the diaphragm setting ring on the lens in one direction or the other until the brilliance of the two light-emitting diodes located underneath the image is balanced.

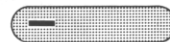
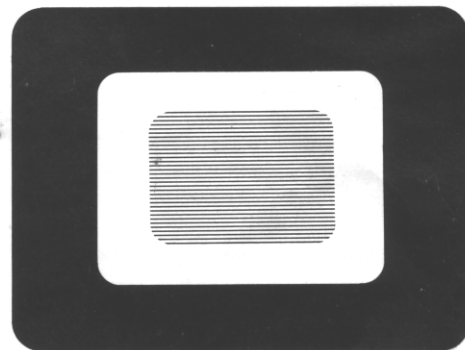
When one diode is lit and the other on the point of going out, there is an over- or under-exposure of about 1 stop. This difference in exposure remains constant for all filming speed/film sensitivity combinations.

## Important

The cell is automatically withdrawn:

- a) as soon as you press on the release;
- b) after about  $\frac{1}{2}$  minute's operation, in order to avoid unnecessary consumption of current.

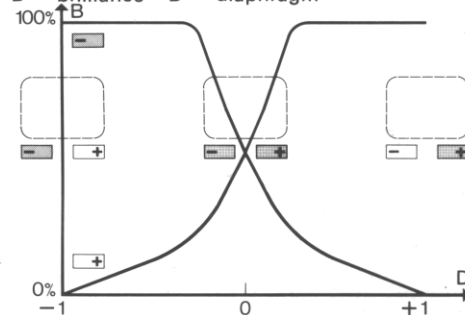
A locking system prevents the camera from filming until the cell is completely retracted.



Center-weighted light reading on 35 % of the picture area.

## Ignition characteristic of the light-emitting diodes

B = brilliance D = diaphragm



## Loading and unloading the camera

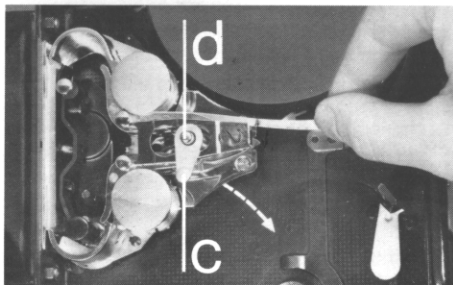
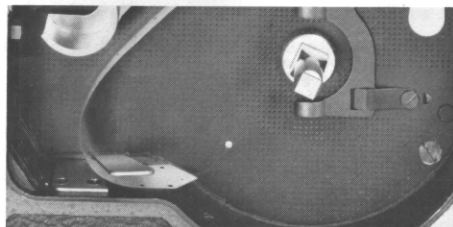
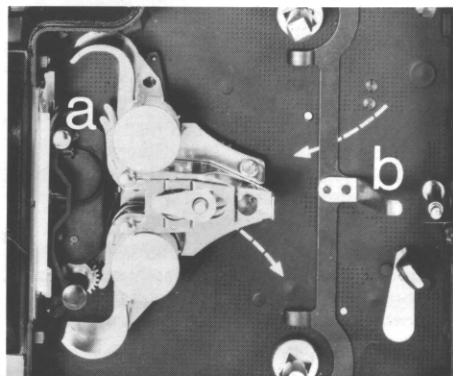
Both these operations should be carried out in a dimly lit place.

### Actual loading

- Before loading your camera, fit the battery on the lid, plug it in and set the speed.
- To remove the lid, turn knob 27 in the direction indicated by the arrow.
- Make sure that the pressure pad pin (a) is locked, and that the pressure pad cannot open.
- Remove the empty spool from its spindle by pressing on ejector (b) and place the new spool containing the film on the upper shaft (film should run in direction indicated by the arrow).

*N.B.: In the film gate, the dark, shiny side of the film (backing) should face towards the back of the camera, the light, matt side (emulsion) towards the lens.*

- Using the film cutter, cut off the end of the film diagonally between two perforations, as



shown in the illustration. Take care not to cut off the part of the leader with the small holes (emulsion code-number). The piece of film cut off must not be left inside the camera.

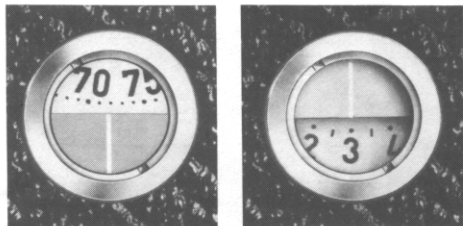
- Close the loop formers by setting control lever (c) parallel to the pressure pad.
- Press the release, at the same time pushing the end of the film against the feed sprocket. The film is automatically threaded into the camera.
- Allow 10 to 12 inches of film to pass through, then stop the mechanism.
- Open the loop formers by pressing on knob (d). (If you accidentally leave them closed, they will open automatically once you put the camera lid on.)
- Insert the end of the film into the slot in the core of the take-up spool. Wind the film round (about 3 turns) and place the take-up spool on the lower spool shaft.
- Turn the take-up spool by hand, in a clockwise direction, to take up any slack film.

### Final check

- Run the camera for a few seconds to make sure that the film is advancing properly and that the loops are forming correctly at both ends of the film gate.
- Put the lid back on and lock it. If it does not lock first time, whatever you do, do not force it! The lid, the spools or the pressure pad may be incorrectly positioned.

*N.B.*

Loading the 400 ft magazine is described in a special Instruction Manual.

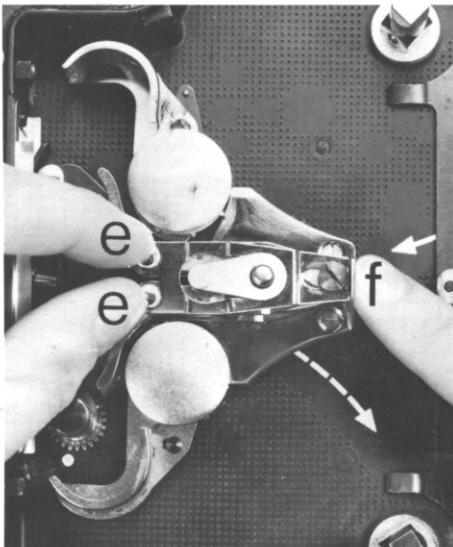


### Footage counter

The footage counter shows how many feet of film have been exposed. Once the film is threaded, the counter reads "ft". To wind the leader on, run the camera until the figure "0" appears opposite the white line in the footage counter (in the centre of the red mask). Whenever the camera lid is taken off to load or unload the camera, the counter automatically returns to "ft". The mask on the footage counter can be rotated half a turn to show a scale in meters.

*N. B.*

Your film must have a leader about 6 ft long at the beginning, corresponding to the length of film wound onto the take-up spool while the footage counter passes from the indication "ft" to the figure "0". Your film must also have a leader of about 3 ft long at the other end. These lengths of leader are needed to enable the camera to be loaded and unloaded without risk of fogging the emulsion; they are usually destroyed by the laboratory during development.



### Unloading

- Once the film has been fully exposed (as indicated by the footage counter), run the mechanism for about 10 seconds to wind the end leader completely onto the take-up spool.

- A slight pressure on ejector lever (b) allows you to take off both spools.

*N. B.*

When open the camera case forms a sort of bowl and stops the light from getting in between the coil of film and the sides of the spool. To remove the full take-up spool and avoid any risk of fogging the film, you can place the control tape on before taking the

spool out and arrange the metal container so that the spool goes directly into it.

### Loading or unloading by hand

(film loop, mainly with a 400 ft magazine)

- Open the sprocket guides (e) and, to keep them in this position, push slide (f).



# Synchronous sound recording

The H16 EL offers you two possibilities:

- synchronization by cristal control;
- synchronization by sync pulse equipment with automatic clapper.

With the former, you avoid the connecting cable between the camera and the tape-recorder, but you have to have a tape-recorder equipped with a crystal sync pulse generator. With this method, there is no automatic clapper.

With the second of the two possibilities, the sync pulse is provided by the camera, via a special accessory. This requires a connecting cable between the camera and the tape-recorder, which makes it possible at the same time to transmit the start signal (automatic clapper).

## Crystal control equipment

This equipment, available as an extra, comprises:

- 1 Crystal Control Unit 24 or 25 f.p.s. \*
- 1 connecting cable 0.5 m long



- Turn the camera filming speed knob to the position "CRYST".
- Plug the connecting cable into socket 9 on the camera.

The filming speed is then accurately stabilized at 24 or 25 f.p.s., depending on the crystal used, with a precision such that the maximum deviation after 400 ft of film is less than one frame.

\* There are two different Crystal Control Units, one for 24 f.p.s., the other for 25 f.p.s.



## Sync pulse equipment

This equipment, available as an extra, comprises:

- 1 Sync Pulse Generator 25 f.p.s. 50 cycles or 24 f.p.s. 60 cycles (specify frequency when ordering)
- 1 clapper lamp mount
- 1 clapper lamp
- 1 spiral wound cable for connecting up the tape-recorder
- 1 cable for connection to the camera.

The Sync Pulse Generator converts the signal supplied by the camera generator into a standard 50 or 60 cycles alternating sync pulse and conveys a direct current for powering the "beep" generator of the tape-recorder while the clapper lamp is on.



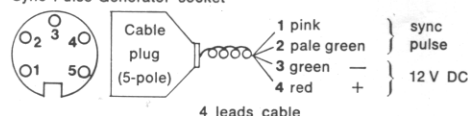
To connect this equipment to your camera:

- remove cover 23 from the clapper lamp mount by simply pulling it out;
- screw the clapper lamp onto its mounting;
- slide the mounting into the hole provided in the camera for the purpose;
- connect camera and accessory by means of the spiral cable supplied with the equipment (7-pin sockets and plugs).

The connection between the accessory and the tape-recorder is effected by means of the spiral cable, whose free end must previously be equipped with a plug fitting the socket on your tape-recorder.

On the Bolex side, the connections are as follows:

Sync Pulse Generator socket



## Operation

As soon as you press on the release, the system works as follows:



- a) the motor starts
- b) the sync pulse is produced
- c) the clapper lamp lights up
- d) 12 V voltage for "beep"

- a) The motor starts up.
- b) The 1.2 V 50 or 60 cycles sync pulse appears on terminals 1 and 2 of the 5-pin socket of the accessory (pink and pale green leads of the spiral cable).
- c) The clapper lamp lights up and fogs the film for about 0.4 seconds.
- d) A 12 V direct current appears on terminals 3 and 4 of the 5-pin socket of the accessory (green and red leads of the spiral cable) the whole time the clapper lamp is on. This current is provided to power a tape-recorder oscillator which records a "beep" on the sound track to mark the opening of each take.

*N. B.*

When using the sync pulse equipment, do not forget to set your camera to the corresponding speed, i.e. 24 or 25 f.p.s.

## Clapper pilot light 29

This white light must come on each time the camera is started, and stay on throughout optical slating. If this is not the case, the clapper lamp is defective and must be changed.

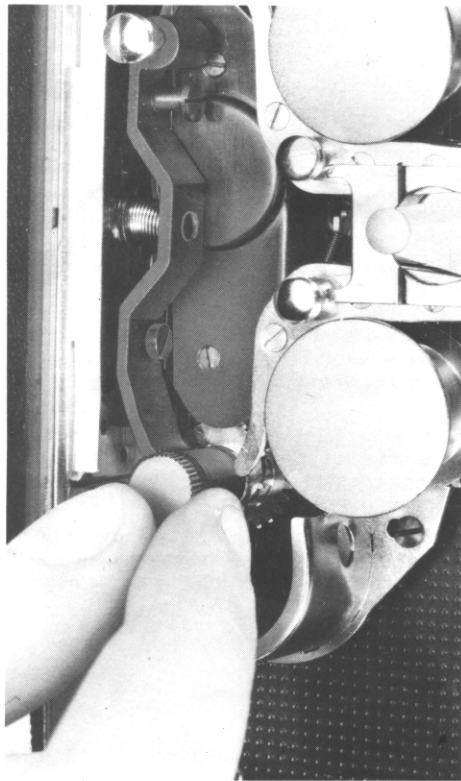
This lamp is an OPTOTECHNIK No. 4-145 S, which you can obtain from your Bolex distributor or any specialized shop.

*N. B.*

The clapper lamp can only light up when a plug is inserted into socket 9 on the camera; the camera then runs only at 24 or 25 f.p.s. (locking lever).

If you are working with a crystal control unit, do not forget to remove the clapper lamp, to prevent unnecessary fogging of the beginning of your takes.

## How to look after your equipment



### Camera

The interior of the camera, housing the film drive mechanism, must be kept perfectly clean. Gelatine deposits and dust sometimes accumulate in the film gate and on the pressure pad when unexposed film is run through the camera.

To clean these parts, proceed as follows:

- open the pressure pad by lifting its pin;
- unscrew the shaft and remove the pressure pad by pulling it towards you;
- gently clean the pressure pad and film gate, especially the aperture, with a clean cloth wound round the end of a small stick; if the gelatine deposit is hard to remove, moisten the cloth slightly and dry thoroughly after cleaning;
- replace the pressure pad.

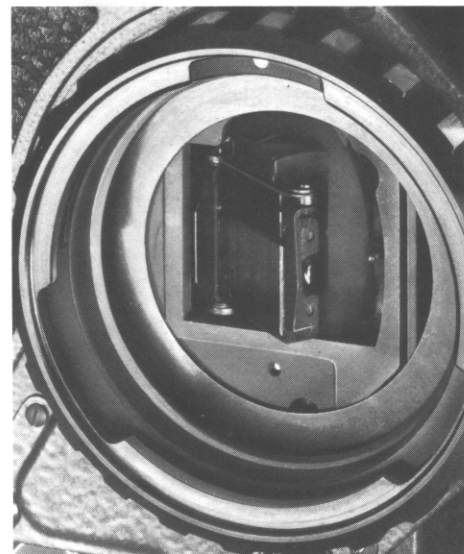
### Reflex prism

To reach the prism situated in front of the filming aperture, it is sufficient to remove the lens and the filter-holder. The prism is mounted on hinges, and can be swung out in order to clean the back. For this purpose, use a soft, dry brush or special tissue paper. The prism can be cleaned even when the camera is loaded (preferably in the shade).

*N. B.*

The ground glass is protected against dust and deposits of emulsion by the collector: it does not need cleaning therefore.

*Important! The reflex viewfinder must not be dismantled.*



## Lenses

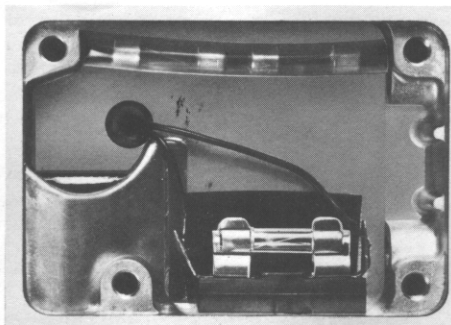
Keep the accessible surfaces of your lenses perfectly clean. Use the special tissue papers sold in photographic stores. If necessary, you can use non-denatured pure alcohol. Avoid rubbing the lenses too hard and too frequently, so as not to damage the anti-reflection bloom.

Always put the lens caps back over the lenses between takes. Special care should be taken to avoid fingerprints (perspiration attacks glass).

A very effective method of protecting the outer face of an expensive lens is to keep a filter permanently in position (e.g. UV or Skylight type).

## Precautions to be taken at low temperatures

Your equipment works perfectly down to  $-20^{\circ}\text{C}$ . At this temperature, however, the amount of film that can be shot decreases very quickly. To avoid the battery getting unnecessarily cold, we recommend you to keep it in one of your pockets for as long as possible, inserting it at the last moment just before filming. In this way you will be able to shoot up to 400 ft of film without any difficulty. If necessary use two batteries, one on you, the other in the camera.



## Replacing the fuse

In case of faulty connection or a defect of any kind, the fuse of the electronic system controlling the motor may burn out.

To replace it:

- loosen the four fixing screws on the bottom of the camera;
- replace the burnt-out fuse by one of the spare fuses kept in the plastic insulation tube;
- check that the camera works properly and replace the base.

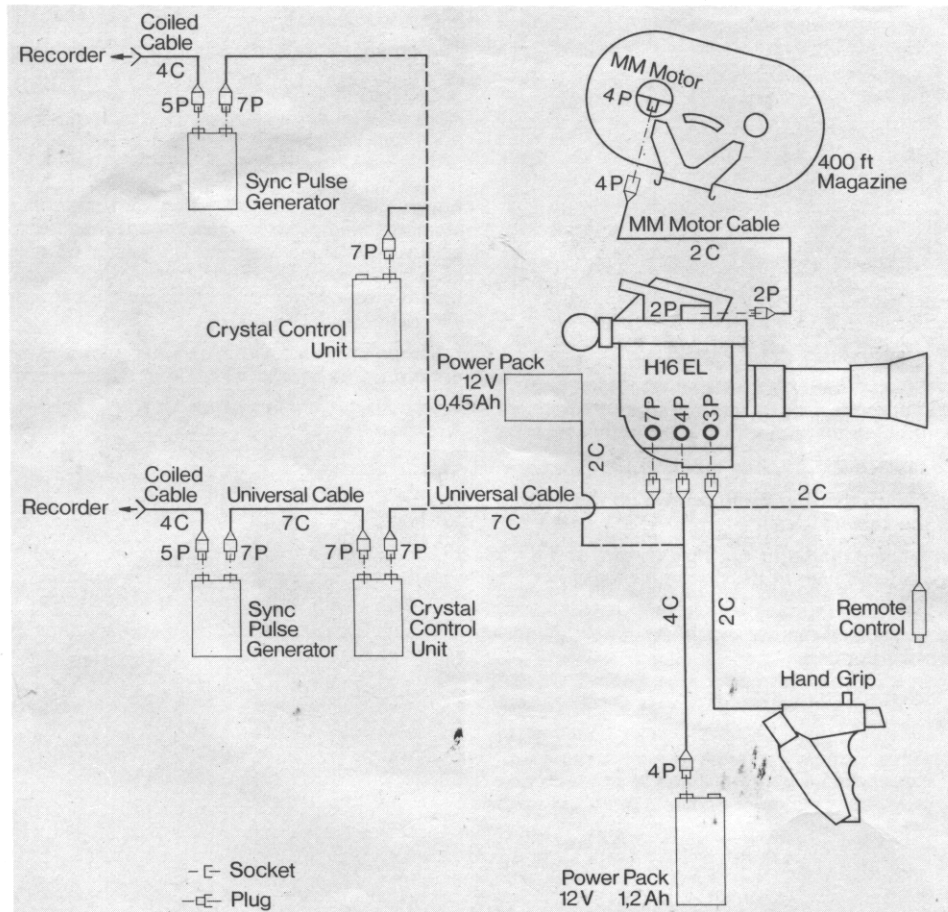
## Power pack

The power packs for the H 16 EL consist of a set of 10 1.35 V Ni-Cd storage batteries connected in series. *Under no circumstances must they be allowed to discharge below the minimum voltage indicated by the lighting up of the warning lamp (10.8 V) on the camera.* If ever the charge goes below this minimum figure, there is a risk of one of the battery elements becoming reversed and, consequently, the power pack losing a great deal of its power: if this should happen, you can regenerate it to a certain extent by giving it several slow charges lasting about 16 hours.

Disconnect the power pack whenever you are not going to use the camera for some time.

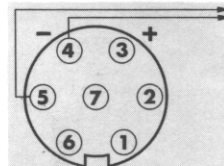


## Electrical diagram for accessories



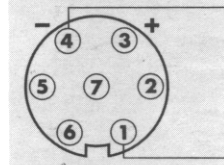
## Sockets diagram

### Sockets seen from outside

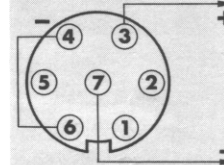


#### Synchro socket

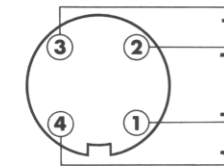
Signal output for sync pulse accessory  
1000 cycles  
at 25 f.p.s.



Input for crystal control  
100 cycles  
at 25 f.p.s.

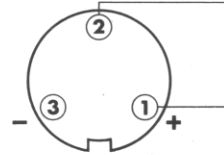


Output tension of the clapstick  
12 V during the optical slating



#### Power socket

Feeding of the electronic part

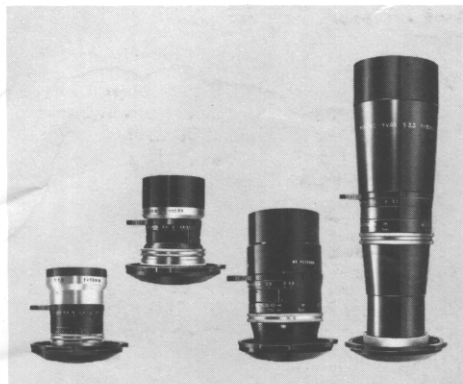


#### Feeding of the motor

#### Remote-control socket

Switch for remote-control

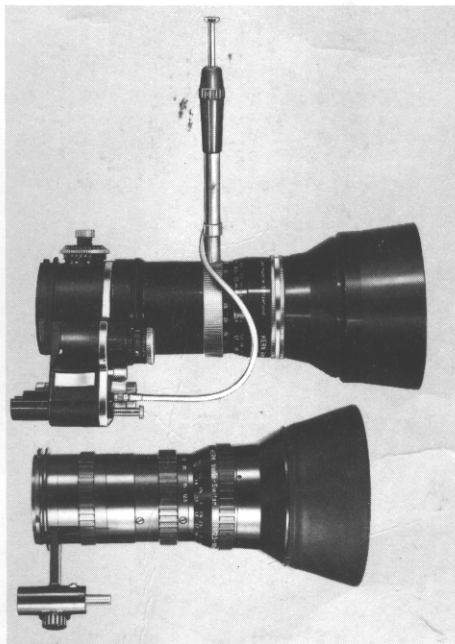
# Lenses



— with fixed focal length:

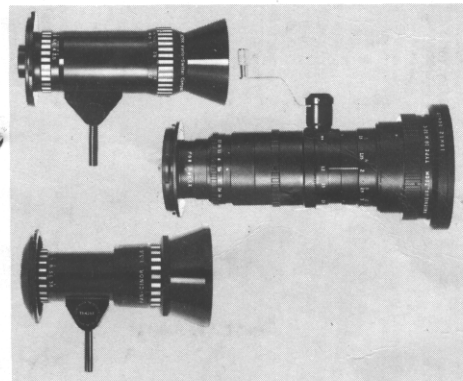
Kern Switar 10 mm f/1.6  
 Kern Macro-Switar 26 mm f/1.1  
 Kern Macro-Switar 75 mm f/1.9  
 Kern Macro-Yvar 150 mm f/3.3

The camera also accepts most lenses with standard mount in combination with an adapter.



— zoom type:

Kern Vario-Switar 100 POE 16-100 mm f/1.9  
 Kern Vario-Switar 12.5-100 mm f/2



Kern Vario-Switar Compact 17-85 mm f/3.5  
 Angénieux 10×12 C 12-120 mm f/2.2  
 Angénieux 10×9.5 C 9.5-95 mm f/2.2  
 Angénieux 10×12 B DA 12-120 mm f/2.2  
 Angénieux 6×9.5 C 9.5-57 mm f/1.6-f/2.2  
 Sopelem Pan-Cinor 85 17-85 mm f/2

**Bolex International S.A.**  
**Yverdon/Switzerland**

### ***After-sales service***

Thanks to our international organization, we offer you impeccable service all over the world. You can entrust your equipment with complete confidence to any Bolex distributor, most of whom employ specially qualified technicians, usually trained in Switzerland. In case of any exchange of correspondence, do not forget to indicate the serial number marked on the bottom of your camera.

**BOLEX**  
Hallmark of quality

Bolex International S.A. reserves the right to modify, without prior notice, the appearance and characteristics of the equipment described in this Instruction Manual

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